

SONY®

SERVICE MANUAL

ETC

VCK-2400



SONY CORPORATION

7-35, KITASHINAGAWA -6

SHINAGAWA-KU

TOKYO, JAPAN

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SECTION 1

GENERAL DESCRIPTION

1-1. INTRODUCTION

The Model DVC-2400 represents an outstanding engineering achievement. This Camera is designed especially for use with the SONY DV-2400 Videocorder. However, it can be connected to any SONY Series CV-2000, CV-2100 Videocorder with the optional Camera Adaptor, Model CMA-1.

Camera operation is extremely simple; the operator need only aim the camera and adjust optical focus. Automatic sensitivity control maintains a constant video output over a wide range of light values.

The operating temperature range is from 20°F to 125°F. Within this range, free-running horizontal sweep frequency changes less than 1% and vertical frequency, focus, linearity and video output remains unchanged. Clean, high-resolution pictures are assured by a unique video amplifier system and special low-noise SONY transistors.

A built-in viewfinder employs a 1.3" picture tube to display camera output directly. This feature permits parallax-free framing and perfect optical focus and zoom adjustments.

1-2. SPECIFICATIONS

Camera tube	- 2/3" separate mesh vidicon M7075 or 6631
Semiconductors	- 40 transistors plus 19 diodes
Scanning system	- 525 lines, 60 fields per sec. with 2:1 interlace, when supplied with sync signals from the DV- 2400 Videocorder
Standard lens	- VCL-16 Zoom type, F2, 16-64 mm "C" mount
Horizontal resolution	- More than 400 lines
Horizontal frequency	- 15.75 kHz
Vertical frequency	- 60 Hz
Signal-to-noise ratio	- Greater than 40 dB
Video output	- 1.0 Volts(p-p), sync negative, load impedance 50 ohms
Automatic sensitivity	- 300 lux to near infinity (with F2 lens)
Power consumption	- 8 watts
Power requirements	- DC 12V supplied by the DV- 2400
Dimensions	- 2-13/16"(W) (BOTTOM) 2-1/2"(W) (TOP) 5" (H) 8-1/2"(L)
Weight	- 5 lbs, 8 oz. (with zoom lens)

1-3. OPERATION (with SONY DV-2400 Videocorder)

- Step 1. Insert the 10-hole connector of the camera cable into the 10-pin receptacle at the bottom of the camera. Mate the guide pin of the cable connector to the slot in the receptacle and seat the connector. Turn the locking collar on the receptacle counterclockwise to lock the connector firmly into place.
- Step 2. Connect the other end of the cable to the receptacle marked CAMERA on the side of the Videocorder. Lock the connector into place by tightening the locking collar on the cable connector.
- Step 3. Slide the microphone holder into the Microphone Shoe atop the camera, and plug the cable into the Mini jack on the side of the camera case.
- Step 4. Set the Function Lever on the top of the Videocorder to the STANDBY position. You will hear the motor start. In a few moments the raster should appear on the screen of the monitor (behind the eyepiece).
- Step 5. Remove the lens cap and point the camera at the subject. Adjust the zoom lever for the desired subject coverage and adjust the optical focus ring for a sharp picture.
Note: In most cases, set the lens opening to maximum (F2). Stop down the lens only when operating in bright outdoors or under studio-type lighting conditions. Make sure that the picture is satisfactory before actual recordings are started.
- Step 6. Start the recording by depressing the red RECORD button on the top of the Videocorder. The recording can also be started by pressing the button on the front of the camera (below the lens) or by pulling the trigger on the hand grip. A red light mounted behind the eyepiece lights to show the operator that the recording is in progress.
- Step 7. The audio part of the recording can be monitored by plugging the earphone into the jack marked EAR on the top of the Videocorder.
- Step 8. To stop the recording, press the RECORD button again or release the trigger (which ever had been used to start the recording).

Set the Function Lever to STOP to shut off the system.

NOTE - Observe the following when operating the DV-2400 from storage batteries.

- a. Monitor battery condition to make sure that the batteries are not discharged too deeply. The battery meter on the top of the Videocorder shows battery conditions under load. Do not use the system when the meter reads in the red zone.
- b. A drop in battery voltage below 11 volts will result in a loss of electrical focus in the viewfinder. This symptom signals low battery voltage. Do not continue to drain the batteries beyond this point as the ability of the batteries to be recharged will be impaired.

OPERATION WITH THE CMA-1

The CMA-1 permits the DVC-2400 camera to be operated with one of the decks in the CV-2000 series. Attach the CMA-1 to the Videocorder as shown in the CMA-1 operating instructions.

Proceed as follows.

- Step 1. Connect the camera cable to the camera as shown Step 1 of the foregoing procedure.
- Step 2. Connect the other end of the cable to the mating connector on the CMA-1.
- Step 3. Plug the AC cord of the CMA-1 into one of the AC outlets on the rear jackplate of the Videocorder. Plug the mini jack into the MIC. IN jack and plug the 6-pin connector into the CAMERA jack on the Videocorder.
- Step 4. Turn on the power switch on the CMA-1.
- Step 5. The picture should appear in the screen of the viewfinder in a few moments.
- Step 6. Follow the regular operating procedure for the deck to make the recording. (The red lamp in the viewfinder does not operate when the camera is used with the CMA-1.)

OPERATING PRECAUTIONS.

To protect the vidicon:

1. Avoid mechanical shock to the camera.

2. Do not carry the camera with the lens pointing downwards. In particular, avoid mechanical shock to the camera when the lens is pointing downwards.
3. Never point the camera at the sun or at another source of intense light. Keep the lens stopped down when shooting brightly illuminated scenes. Do not allow brightly illuminated scenes to remain stationary on the screen. Move the camera from side-to-side occasionally to keep images from being "burned in" at the target.

1-4. REMOTE CONTROL

The record mode can be started and stopped in the DV-2400 by means of the remote control button on the front of the DVC-2400 camera. Use this button directly whenever the camera is mounted on a tripod or the monopod. When the handgrip is in place, the button is actuated by the trigger on the handgrip. Remote control action is not self locking; the button must be held down for the duration of the recording. Recording stops when the button is released.

1-5. CONNECTIONS.

Figure 1-1 shows the signals carried by the camera cable.

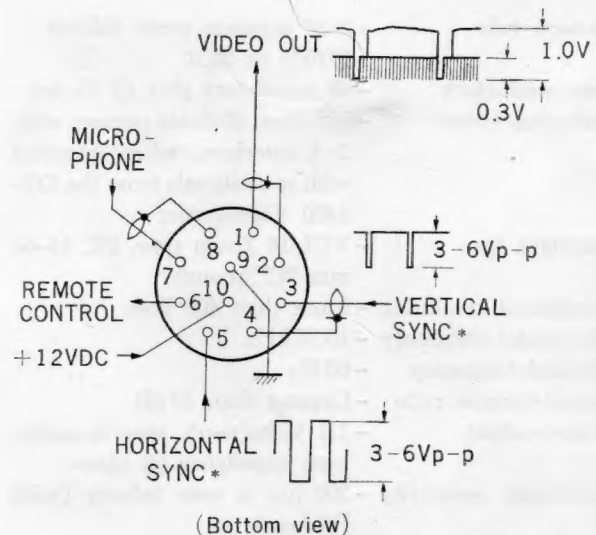


Fig. 1-1 INPUT AND OUTPUT SIGNALS
AT THE 10-PIN CONNECTOR
(* Sync signals from the DV-2400)